

## **REMARKS**

Claims 1 and 3-19 are pending in the present application. The Examiner has rejected claims 1 and 3-19 under 35 U.S.C. §103. Applicant has amended claims 1, 3-4, 7-8, 10-17, and has added new claims 20, 21, and 22. No new matter has been added.

### **Section 103 Rejections of Claims 1, 14, and 15**

Claims 1-11, 14-15, and 17-19 were rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,219,045 (Leahy, *et al.*) in view of U.S. Patent No. 5,917,944 (Wakisaka, *et al.*).

Applicant disagrees with the Examiner's Response to Arguments in paragraph 4 of the Action. First, the Examiner argues in essence that Leahy determining a location of an avatar. Applicant notes that the avatar exists in a virtual space of a chat room, whereas the local environment and remote world recited in claims 1, 14, and 15 represent real, physical worlds, not virtual worlds. Leahy does not disclose or suggest that the chat room is representative of a real, physical environment. Thus, there is no need for Leahy to *determine the location of sound sources in a local environment*, as essentially recited in claims 1, 14 and 15.

Further, there is no disclosure or suggestion in Wakisaka that the multidimensional microphones should be understood to mean the three axes of a three dimensional space, as suggested by the Examiner. Wakisaka's multidimensional microphones are directed to collecting and removing surrounding, ambient sound, not localizing a sound source. Thus, there is no motivation in Wakisaka to combine its teaching with Leahy to form an *acoustic localizer comprising a plurality of microphones arrayed to span the three coordinate axes of a three dimensional space*, as essentially recited in claims 1, 14, and 15.

Finally, Applicant notes that one can show non-obviousness if the combination of references fails to disclose or suggest all claim limitations. This showing can be made by

examining each reference individually to show that each lacks certain claim limitations recited in the rejected claim, so that the combination of the two does not disclose or suggest all claim limitations.

Applicant notes the Examiner's suggestion that additional claim limitations pertaining to the directionality calculation for localizing the sound source would overcome the rejections. Applicant thanks the examiner for so indicating. Applicant has amended claims 1, 14 and 15, and added new claim 22, to recite a method for localizing a sound source *by forming a surface for each said microphone pair comprising a locus of points that induce said delay difference in said pair of microphones and forming an interception of each surface for each said axis pair to estimate a location of said sound source, wherein an error  $\Delta$  in one direction for said source location is given by*

$$\Delta = 2\sqrt{\frac{2D^2}{\alpha-1} - \frac{2\beta}{\alpha+1}};$$

wherein

$$\alpha = \frac{8d^2 f^2}{c^2} - 1, \quad \beta = -\frac{d^2}{4},$$

wherein  $D$  is a largest distance a microphone pair and said sound source location as projected along said one direction,,  $d$  is a closest distance between microphone pairs,  $f$  is a sampling frequency, and  $c$  is a speed of propagation for said sound signal. Applicant urges that this method of localizing a sound source is neither disclosed or suggested in either Leahy or Wakisaka.

Thus, Applicant urges that amended claims 1, 14, and 15 are not *prima facie* obvious over Leahy and Wakisaka. Reconsideration and withdrawal of these rejections are respectfully requested.

Claims 3-11 depend from claim 1, and claims 17-19 depend from claim 15, and are thus patentable for the same reasons as claims 1 and 15, respectively. Reconsideration and withdrawal of these rejections are respectfully requested.

New claims 20, 22 and 21 depend from claims 15 and 1, and Applicant urges that these claims are patentable for at least the same reasons as claims 1 and 15.

### **Section 103 Rejections of Claims 12, 13, and 16**

Claims 12-13 and 16 were rejected under 35 U.S.C. §103(a) as being obvious over Leahy and Wakisaka, and further in view of U.S. Patent No. 6,584,439 (Geilhufe, *et al.*).

Claims 12-13 depend from claim 1, and claim 16 depends from claim 15. Applicant urges that Geilhufe does not disclose or suggest estimating a sound source location as recited in claims 1 and 15, and thus a *prima facie* case of obviousness against dependent claims 12-13 and 16 cannot be maintained based on the combination of Leahy, Wakisaka and Geilhufe. Reconsideration and withdrawal of these section 103 rejections are respectfully requested.

**CONCLUSION**

Applicant urges that claims 1 and 3-22 are in condition for allowance for at least the reasons stated. Early and favorable action on this case is respectfully requested.

Respectfully submitted,

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